

Example 9: Find the potential energy (relative to infinity) of a 50. kg person flying at an altitude of 1.0×10^4 m above Earth's surface.

$$E_p = - \frac{GMm}{r}$$

$$= - \frac{(6.67 \times 10^{-11})(5.98 \times 10^{24})(50)}{[(6.38 \times 10^6) + 10000]}$$

$$E_p = -3.1 \times 10^9 \text{ J}$$